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ABSTRACT

This paper discusses the notion of community as an outcome of working within an online environment. In particular, the paper explores the concept of users' development of a sense of community as an outcome of working within an online environment designed to support the professional and personal development of its users. The paper discusses previous research, which has explored the development of a sense of community and reports a study that investigates the development of a sense of community among users of a community-oriented site supporting teachers' professional development. The data gathered in this inquiry provided evidence that the users of the site established senses of community of varying degrees, and suggest the need for more work to more fully investigate what sorts of online activities hold the best prospects for community development.(Contains 22 references, 2 tables, and 1 figure.) (Author/AEF)

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Supporting The Development Of Learning Communities In Online Settings

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Abstract: This paper discusses the notion of community as an outcome of working within an online environment. In particular the paper explores the concept of users' development of a sense of community as an outcome of working within an online environment designed to support the professional and personal development of its users. The paper discusses previous research which has explored the development of a sense of community and reports a study that sought to investigate the development of a sense of community among users of a community-oriented site supporting teachers' professional development.

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Introduction

The social phenomenon of community can be put to good use in the support of learning through the development of learning communities. Although difficult to define it is evident that community is a central component of the lives of all individuals. People have always and will always form communities at one level or another as part of their existence. Indeed, community is such a central part of our lives that "if the sense of living in, belonging to, and having some commitment to, a particular community is threatened then the prospect of living rewarding lives is diminished" (Puddifoot, 1996, p. 327). The power of community to support learning rests with its centrality to our daily lives and an unexplained phenomenon where the sum of the parts of a community is in some way greater than the whole.

Virtual learning communities and their role in supporting learning

As we begin to explore the concept of community and its potential to support learning it is important to acknowledge that a positive sense of community can have many referents ranging from "family, fellow workers, friends, neighbours, religious and fraternal bodies" (Sarason, 1974, p. 153). It is equally important to acknowledge that community exists in both a geographic and relational sense and that the two are not mutually exclusive (eg. Worsley 1991). The online environment provides for the development of the relational community where members may never meet face to face. These communities have been dubbed virtual communities and have been identified as 'real' communities in a sociological sense (Surratt, 1998).

In the online learning environment the desired community is known as a *virtual learning community*. Maxwell (1998) recognizes the value of a learning community reporting on the positive influence learning communities have on both socialization and learning outcomes. Similarly Kellogg (1999) argues that learning communities promote more active and increased intellectual interaction and a sense of common purpose and Palloff and Pratt (1999) posit that the creation of a learning community supports knowledge acquisition. These communities are considered to be of such value in the support of learning that researchers believe the formation of virtual learning communities is central to the success of online learning (Hiltz, 1997; Palloff and Pratt, 1999).

Learning communities and learning

Learning communities support learning by promoting the benefits of collaborative learning environments. Socio-constructivist approaches to learning clearly provide evidence that when students work together their

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cognitive development can be enhanced (eg. Glasssman, 2001). In collaborative learning environments students can become actively involved in the construction of new ideas and concepts and in this way student learning moves beyond the information presented to them (eg. Bruner, 2001). Johnson (1991) asserts "that collaborative learning methods are more effective than traditional methods in promoting learning and achievement" and Benbunan-Fich (1997) concludes that "working in groups, instead of alone, significantly increases motivation, perception of skill development and solution satisfaction". The benefits are not limited to the cognitive domain. Panitz (1997) identified 67 benefits spanning the academic, social and psychological domains. And Slavin (1990) posits that collaborative learning environments promote higher levels of motivation as well as social and attitudinal benefits concluding that the effect of collaborative learning on achievement is clearly positive.

In addition to the promotion of collaborative learning principles, learning communities promote a positive environment created by members who actively seek participation from others, valuing all members and sharing the results of their efforts (Moore & Brooks, 2001). This positive environment and members' preparedness to work collaboratively are indicative of virtual learning communities and fundamental in the support of learning.

Strategies that support community development

Unfortunately little scientific research exists to guide the development of a virtual learning community although some strategies have been identified through anecdotal records (Palloff & Pratt, 1999). Combining these strategies with knowledge of community gleaned from the social sciences provides initial support in the development of virtual communities.

Establishing a welcoming personal environment is an important strategy in constructing the 'human' elements of community (Hiltz, 1998; Palloff & Pratt, 1999). And facilitating regular and meaningful communications where members can interact and share their ideas and concerns (Moore & Brooks, 2001), is central to the functioning of a community. An additional strategy is to provide an initiating reason which may be a disorientating dilemma, an issue, a concern, a contentious discussion or a particular community problem (Moore & Brooks, 2001). Further impetus can be gained by emphasising the benefits associated with becoming a community member. These benefits could include an increase in intellectual capital (Stewart, 1997), reciprocity or an increase in social capital (Putnam, 2000). Further support is found in the seven basic steps outlined by Palloff and Pratt (1999) (Table 1).

Table 1: Seven Basic Steps in the Development of an Online Community

1. Clearly define the purpose of the group
2. Create a distinctive gathering place for the group
3. Promote effective leadership from within
4. Define norms and a clear code of conduct
5. Allow for a range of member roles
6. Allow for and facilitate sub-groups
7. Allow members to resolve their own conflict

Determinations of the development of a sense of community

Prior to engaging in the measurement of community it is important to understand that community is a sense rather than a tangible entity and it is members' sense of community (SOC) that should be identified and measured. McMillan and Chavis (1986) define SOC as a "feeling that members have a belonging, members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). McMillan and Chavis further developed a four-dimensional model of SOC arguing the presence of four discrete entities in members' sense of community, membership; influence; integration and fulfillments of needs; and a shared emotional connection.

The model provides a mechanism for understanding SOC but not for measuring the experience. This can be achieved via the Sense of Community Index (Chavis, Hogge, McMillan & Wandersman, 1986) based on the McMillan and Chavis (1986) four dimensional model of SOC. A measurement tool that has been shown to adequately assess SOC having validity across contexts (Chipuer & Perry, 1999).

Learnscope Virtual Learning Community

The dearth of empirical information describing the essence of community development and our interest in exploring how communities can be developed and maintained in online settings prompted the inquiry we report here. As part of a Web site evaluation project, we undertook to explore the degree to which users of the site sensed themselves within a community of users.

The Learnscope Virtual Learning Community is a Web site within Australia that has been designed to assist in meeting the professional needs of people within the Australian Vocational Education and Training (VET) sector (Fig. 1.). The VLC is a dynamic and interactive Web-based support system that seeks to support the development of a critical mass of VET staff who are able to use flexible learning approaches to accelerate Australia's transition to the information economy. The VLC is supported by, and works within the Australian Flexible Learning Framework and represents one of a number of activities undertaken in the Framework to achieve the goal of providing *Creative, Capable People* (Australian Flexible Framework, 2001).

Fig 1: The Learnscope Virtual Learning Community Home Page (www.learnscope.anta.gov.au)

The LearnScope Virtual Learning Community consists of 3 main elements: the Community Hub, supporting interaction and communication between the various members. Includes a login area, a personal space, discussion forums; Go Learn, an area providing access to a variety of resources to support members' professional development; and a Resource Centre, access to information and content about flexible delivery.

Since an important aim of the Web site was to facilitate professional development, the form of community which the site sought to develop was based on learning and personal development. We organized an inquiry process that would provide some information on the capacity of the site to create a sense of community among the users and we also sought to explore factors that might influence the scope and extent of the community development. The purpose of this inquiry was to explore the development of users' sense of community obtained from use of the site. Users of the VLC were asked to complete an online questionnaire which probed aspects of their use of the site. One component of the questionnaire asked users to respond to a series of questions that probed their perceptions about:

- Their sense of membership of the VCL community;
- The sense of influence they had within the community as a consequence of their involvement;
- Their sense of the extent to which the VLC facilitated integration and fulfilment of needs
- The users' sense of a shared emotional connection with other users.

The series of questions was based on the questionnaire developed by Chavis, Hogge, McMillan and Wandersman, (1986), and included the items shown in Table 2 below. The online questionnaire was completed by 121 participants who considered themselves as more than casual users of the site.

Table 2: Member's Sense of Community

statement	scale	true %	false %
I think VLC is very helpful in meeting my needs in flexible delivery	integration and fulfillment of needs	76	24
People using the VLC seem to share the same values	integration and fulfillment of needs	78	22
Other members and I want the same things from VLC	integration and fulfillment of needs	63	37
I think the VLC has an appropriate scope in what it tries to do	Integration and fulfillment of needs	94	6
I can recognize most of the people who participate in the VLC	sense of membership	29	71
I feel at home in VLC	sense of membership	53	47
Many of the other people who use the VLC know me	sense of membership	28	72
Existing members of the VLC welcome new members documents etc.	sense of membership	68	32
I care about what other members think of my actions when using the VLC	sense of influence	75	25
I feel I have influence over what happens in the VLC	sense of influence	46	54
I feel that other people in the VLC would help me if I requested help	sense of influence	99	1
I feel my opinions and ideas are welcomed by others in the VLC	sense of influence	83	17
It is very important to me to participate in the VLC	shared emotional connection	42	58
People in the VLC seem generally to get along with each other	shared emotional connection	93	7
I expect to continue to participate in VLC into the future	shared emotional connection	89	11
People in the VLC seem to have similar understandings and interests	shared emotional connection	84	16

Sense of Community

The feedback provided strong support for the supposition that the site did provide users with the support and connection required to give individuals a sense of participation within a community. Users' responses for the scale exploring their sense of the extent to which the VLC facilitated integration and fulfillment of needs indicated a strongly positive response. The questions exploring users' sense of membership tended to return the least positive responses. It was evident that within the large user base that while many users were comfortable with the interactions and connection, the size of the user base precluded any personal relationships and the ensuing sense of membership which is usually associated with such connections.

The users seemed to gain a relatively strong sense of shared emotional connection from their experiences. The item with the lowest rating was that which sought to determine the value of the VLC to users. While the users appeared happy to participate in the community and felt that they were dealing with people with similar interests, there was a sense among many that the community was not overly important to them in the big picture.

Users reported quite positive responses to items that sought to establish their sense of influence within the community. The responses indicated that users generally felt well supported by others but it appeared that many felt that their contributions were not perhaps that significant in the overall community. Given the large numbers of users and the diverse nature of their backgrounds and previous experiences, the responses provided relatively strong evidence of the site giving users a sense of community among those participating.

Factors influencing sense of community

The inquiry sought to establish factors which appeared to influence the SOC experienced by users of the VLC.

a. Level of expertise wiuth ICT: Users provided an indication of their perceived level of expertise with learning technologies using a scale ranging from 1 low through to 4, very high. An inspection of the means scores achieved by students reporting the different levels of expertise showed very consisted scores (Figure 1). It appeared that background knowledge of the subject matter on offer was not a factor overly influencing users' sense of community development. A one factor analysis of variance was used to test for differences among users sense of community based on perceived levels of LT expertise (Figure 1). The results did not indicate any significant differences in sense of community against this factor ($F(3,99) = 0.388$, ns).

b. Level of experience with ICT: A second test was carried out to explore whether users' perceived levels of ICT experience was a factor influencing the development of a sense of community. Users were asked to report their levels of expertise with information and communications technologies (ICT). Their responses varied from score of 1, low levels to scores of 4, very high levels. Once again, the means scores achieved by students reporting the different levels of expertise were very consistent. A one factor analysis of variance was used to test for differences among users' sense of community based on perceived levels of LT expertise. The results did not indicate any significant differences in sense of community against this factor ($F(3,99) = 1.008$, ns).

c. Level of access to ICT: A third test was carried out to explore whether users' levels of access to ICT was a factor influencing development of a sense of community. Users were asked to report their levels of ICT access using responses of 1 (limited access) or 2 (access not limited). A one factor analysis of variance was used to test for differences among users' sense of community based on access to ICT. The results did not indicate any significant differences in sense of community against this factor ($F(1,101) = 1.192$, ns).

d. Level of use of the VLC: Another test was carried out to explore whether users' levels of use of the Community Hub was a factor influencing development of a sense of community. Users were asked to report their levels of use of the Community Hub using responses of 1 (limited use) through to 4 (regular use). A one factor analysis of variance was used to test for differences among users sense of community based on use of the Community Hub (Figure 4). The results indicated a significant difference at the .05 level ($F(3,99) = 2.94$, $p < 0.05$). This finding was in accord with expectations and supportive of the notion that the interaction was an important factor in building the sense of community within users.

e. Level of use of the Resource Centre: A further test was carried out to explore whether users' levels of use of the Resource Centre was a factor influencing development of a sense of community. Users were asked to report their levels of use of the Resource Centre using responses of 1 (limited use) through to 4 (regular use). A one factor analysis of variance was used to test for differences among users sense of community based on usage of the Resource Centre. The results indicated a significant difference at the .05 level ($F(3,99) = 5.46$, $p < 0.05$). This finding could be interpreted in much the same way as we interpreted the finding that use of the Hub was a contributing factor to the development of a sense of community. It might well be however, that this finding shows that users who made a high level of use of the Hub also made a high level of use of the Resource Centre. When the levels of usage of the Hub and resource Centre were compared, there was a significant correlation ($r^2 = .33$).

These findings are quite interesting in light of the nature of learning communities supported by online environments. It is difficult to speculate too much with the results. They suggest that the development of a sense of community by users of the Learnscope VLC was not influenced by such features as their levels of experience and ICT access. The findings suggest that the sense of community is developed very much by use of the site and that all users appear capable of developing community membership through use of the site. We have taken this finding as evidence that the Learnscope sight is in fact returning in some way, the forms of outcomes that it was developed for.

Summary and Conclusions

The use of online facilities to support and sustain the development of communities of learners is becoming quite common among many educational groups. In this paper we have discussed the notion of a learning community and possible ways by which the development of communities might be determined. An exploration among users of the Learnscope Virtual Community, suggested that this site did in fact provide learners with a sense of community. A further exploration of factors that might have been likely to influence learners' sense of

community revealed that aspects such as ICT expertise, levels of access and previous experience had no discernible impact on the development of SOC among learners. What was found to be important, and as might be expected, was the level of use of the site. Interestingly we were unable to demonstrate which sorts of activities had the greatest impact on the development of SOC and this arises as a possible line of inquiry for further work.

The findings from this paper appear to support the need for more research and inquiry into the development of community sense among users of online sites that aim to promote users personal development through such processes as interaction and communication with others. The data gathered in this inquiry provided evidence that the users of the Learnscope site did in fact establish senses of community of varying degrees and suggest the need for more work to more fully investigate what sorts of online activities hold the best prospects for community development.

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